REMARKS

The December 15, 2006 Final Office Action was based on pending Claims 1–12, 14–22 and 24–40. By this Response, Applicant is amending Claims 1, 5, 7, 8, 14, 15, 18, 20, 21, 24, 28, 30 and 31 and is cancelling Claims 9–12, 22 and 32–40 without prejudice or disclaimer. Claims 2–4, 6, 16, 17, 19, 25, 26, 27 and 29 remain as originally filed, and new Claims 41–46 have been added.

Thus, after entry of the foregoing amendments, Claims 1–8, 14–21, 24–31 and 41–46 are pending and presented for further consideration. In view of the foregoing amendments and the remarks set forth below, Applicant respectfully submits that Claims 1–8, 14–21, 24–31 and 41–46 are in condition for allowance.

SUMMARY OF REJECTIONS

The December 15, 2006 Final Office Action rejected Claims 1–8, 14–22 and 24–31 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,485,624 to Steinmetz et al. ("Steinmetz").

Claims 9 and 32 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,134,698 to Imamura et al. ("Imamura"). Claims 10–12 and 38–40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Imamura.

Claims 33–37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Imamura in view of U.S. Patent No. 5,548,730 to Young et al.

CANCELLED CLAIMS 9–12, 22 AND 32–40

Applicant respectfully disagrees with each of the rejections with respect to Claims 9–12, 22 and 32–40. However, in order to expedite the prosecution of this application, Applicant has cancelled Claims 9–12, 22 and 32–40 without prejudice or disclaimer. Applicant reserves the right to claim in one or more continuing applications the same subject matter and/or subject matter of a different scope than that recited by cancelled Claims 9–12, 22 and 32–40.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 1–8, 14–22 and 24–31 were rejected as being unpatentable over Steinmetz. In view of the foregoing amendments and for at least the reasons set forth

below, Applicant respectfully disagrees and requests reconsideration of the aforementioned claims.

Independent Claim 1

Focusing on amended independent Claim 1, in one embodiment of Applicant's invention a method is disclosed for performing data string operations. The method comprises: (i) routing a series of instructions to a general purpose microprocessor having a first execution unit for executing instructions and (ii) analyzing the instructions to detect an instruction to perform a <u>data string manipulation</u> operation. An undecoded version of the detected data string manipulation instruction is then forwarded <u>from the first execution unit</u> to a second execution unit. The method further includes controlling read and write operations to and from external memory via control circuitry with each of the first execution unit and the second execution unit without intervention by the other execution unit.

Steinmetz does not teach or suggest the method recited by amended independent Claim 1. Rather, Steinmetz concerns the adapting of a processor that does not natively support co-processing into a co-processing system (see, e.g., column 1, lines 11–13). For instance, with particular reference to Figure 2, Steinmetz discloses an I/O device (3) having a memory (10), a processor (14) and a direct memory access (DMA) co-processor (11). The DMA co-processor (11) "'snoops' in on addresses and data transferred from local memory 10 to processor 14" (column 3, lines 1–2). When the DMA co-processor (11) detects a predetermined combination within the snooped data, the DMA co-processor (11) accesses the data being sent from the memory (10) to the processor (14). This accessed data is then used to perform a DMA transfer.

Thus, the method of Steinmetz is substantially different from the method recited in independent Claim 1. For example, Steinmetz requires that the DMA co-processor (11) have the intelligent circuitry to intercept, analyze and receive data from memory (10). The DMA co-processor (11) does not simply receive data forwarded from another execution unit. That is, Steinmetz does not teach or suggest "detect[ing] an instruction to perform a data string manipulation operation [and] forwarding said

instruction to perform the data string manipulation operation <u>from said first execution unit</u> to a second execution unit," as recited by amended independent Claim 1 (emphasis added).

Rather, Steinmetz teaches away from the method of independent Claim 1, and there is no suggestion to modify Steinmetz to teach the claimed invention. In particular, the disclosure of Steinmetz is directed to a co-processing method for use with <u>a primary processor (14) that does not natively support co-processing</u>. As shown in Figure 2, the primary processor (14) does not communicate with the DMA co-processor (11), nor is there any teaching for the primary processor (14) to forward instructions to the DMA co-processor (11). Modifying the primary processor (14) of Steinmetz to forward instructions to the DMA co-processor (11) would render the Steinmetz invention unsatisfactory for its intended purpose and principle operation of using a processor that does not natively support co-processing (see M.P.E.P. §2143.01(V–VI) stating that there is no suggestion to make a proposed modification if the modification would (i) render the prior art invention unit unsatisfactory for its intended purpose or (ii) change the principle operation of the prior art invention).

In addition, Steinmetz does not teach or suggest analyzing a series of instructions to detect an instruction to perform a <u>data string manipulation</u> operation. Examples of data string manipulation operations are identified in Applicant's specification, including, but not limited to, string scans, string searches, string comparisons and the like. Steinmetz merely discloses that the DMA co-processor searches the snooped data (i.e., communications between the memory (10) and the primary processor (14)) for <u>a predetermined combination within an address of the data</u> (see, e.g., column 1, line 60 through column 2, line 2). Depending on the content of the address(es), the DMA co-processor (11) may then extract parameters that relate to the performance of a DMA transfer.

In view of the foregoing, because the cited art does not teach or suggest the method recited in amended Claim 1, Applicant respectfully asserts that Claim 1 is patentably distinguished over the cited art. Applicant, therefore, respectfully requests allowance of Claim 1.

Independent Claims 14, 15 and 24

Amended independent Claims 14, 15 and 24 are believed to be patentably distinguished over the cited art for reasons similar to those set forth above with respect to the patentability of amended independent Claim 1 and for the different aspects recited therein.

Dependent Claims 2–8, 16–21 and 25–31

Claims 2–8 depend from amended independent Claim 1 and are believed to be patentably distinguished over the cited art for the reasons set forth above with respect to Claim 1 and for the additional features recited therein.

Claims 16–21 depend from amended independent Claim 15 and are believed to be patentably distinguished over the cited art for the reasons set forth above with respect to Claim 15 and for the additional features recited therein.

Claims 25–31 depend from amended independent Claim 24 and are believed to be patentably distinguished over the cited art for the reasons set forth above with respect to Claim 15 and for the additional features recited therein.

NEW CLAIMS 41–46

New dependent Claims 41–46 have been added to more fully define Applicant's invention and are believed to be fully distinguished over the cited art.

REQUEST FOR TELEPHONE INTERVIEW

Pursuant to M.P.E.P. § 713.01, in order to expedite prosecution of this application, Applicant's undersigned attorney of record hereby formally requests a telephone interview with the Examiner as soon as the Examiner has considered the effect of the arguments presented above. Applicant's attorney can be reached at the general office number listed below.

CONCLUSION

In view of the foregoing, the present application is believed to be in condition for allowance, and such allowance is respectfully requested. If further issues remain, the Examiner is cordially invited to contact the undersigned such that the issues may be promptly resolved.

Applicant respectfully traverses each of the Office Action's rejections and each of the Office Action's assertions regarding what the cited art shows or teaches. Although amendments, deletions and cancellations have been made, no acquiescence or estoppel is or should be implied thereby. Rather, the amendments, deletions and cancellations are made only to expedite prosecution of the present application, and without prejudice to presentation or assertion, in the future, of claims on the subject matter affected thereby. Any arguments in support of patentability and based on a portion of a claim should not be taken as founding patentability solely on the portion in question; rather, it is the combination of features or acts recited in a claim which distinguishes it over the cited art.

Moreover, by the foregoing amendments and remarks no admission is made that any of the above-cited references are properly combinable. Rather, Applicant submits that even if the references are combined, the references still do not teach or suggest the claimed invention.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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